

**DISTRIBUTED COMPUTER MONITORING SYSTEM AND METHODS FOR
AUTONOMOUS COMPUTER MANAGEMENT**

I CLAIM:

- 1 1. A distributed system for monitoring the resources and events of each of a plurality of networked computers, the system comprising:
 - 3 (a) a first database associated with a first computer, said first database recording both a first data element and a second data element, wherein each of the first and second data elements comprise information about a current state of the first computer at a given time; and
 - 4 (b) a first agent executing on said first computer comparing the first and second data elements in order to assess the occurrence of an exceptional event.
- 1 2. The system of claim 1 wherein the first and second data elements comprise information about a resource of the system.
- 1 3. The system of claim 1 wherein the first and second data elements comprise information about an application's behavior.
- 1 4. The system of claim 1 wherein the first and second data elements comprise information about a user's actions.
- 1 5. The system of claim 4 wherein the first and second data elements further comprise information about a system response to the user's actions.
- 1 6. The system of claim 1 wherein the first and second data elements comprise information about a network.
- 1 7. The system of claim 1 wherein the second data element is compared with the first data element before the second data element is stored in the database.
- 1 8. The system of claim 7 wherein the second data element is compared with the first data element in real time.
- 1 9. The system of claim 1 further comprising a second computer agent executing on a second computer.

1 10. The system of claim 9 wherein the first agent notifies the second agent of the
2 occurrence of the exceptional event.

1 11. The system of claim 10 wherein the notification is postponed while the first agent is
2 not able to communicate with the second agent.

1 12. The system of claim 10 wherein the notification is postponed until a period of low
2 latency and low utilization of a communications network connecting the first agent and the
3 second agent.

1 13. The system of claim 10 wherein the second agent generates and sends a response to
2 the first agent.

1 14. The system of claim 13 wherein the response comprises instructions to the first agent
2 related to the exceptional event.

1 15. The system of claim 1 wherein the first agent notifies a human user of the occurrence
2 of the exceptional event.

1 16. The system of claim 1 wherein the first agent notifies a server executing on a second
2 computer of the occurrence of the exceptional event.

1 17. The system of claim 16 further comprising a second database located on the second
2 computer storing the notification received from the first agent.

1 18. The system of claim 17 further comprising the server transmitting a response to the
2 agent.

1 19. The system of claim 17 further comprising the server storing the response in the
2 second database.

1 20. The system of claim 1 wherein the database comprises a relational database.

1 21. The system of claim 1 wherein the database is selectively pruned to reduce its size.

1 22. A method of analyzing resources and events of a first computer comprising:

- (c) comparing the first dataset and the second dataset in order to determine whether the differences indicate the occurrence of an exceptional event; and
 - (d) if an exceptional event has occurred, initiating an exception handling routine.

1 23. The method of claim 22 wherein initiating an exception handling routine comprises
2 notifying a second computer of the exceptional event.

1 24. The method of claim 22 wherein initiating an exception handling routine comprises
2 notifying a human user of the exceptional event.

1 25. The method of claim 23 wherein the second computer comprises a server.

1 26. The method of claim 23, further comprising the step:

(e) the second computer transmits a response to the first computer.

1 27. The method of claim 26, further comprising the step:

1 28. The method of claim 27, further comprising the step:

2 (g) the second computer stores the response in the second database.

1 29. A peer-to-peer system for monitoring the status of computers in a computer network,
2 the system comprising:

3 a plurality of computer agents, each agent capable of repeatedly storing status
4 information in a database at discrete points in time, each agent further capable of receiving,
5 storing in the database, and responding to queries made from any other agent;

6 wherein, each agent determines whether or not its current performance is consistent
7 with its past performance based upon a continuous, real-time analysis of the agent's own
8 database and, in the event that an agent determines that its current performance is
9 inconsistent with its past performance, addresses the inconsistency.

1 30. The system of claim 29, wherein addressing the inconsistency comprises querying a
2 second agent.

1 31. The system of claim 29, wherein addressing the inconsistency comprises querying a
2 human user.

1 32. The system of claim 29, wherein addressing the inconsistency comprises querying a
2 server.